



Division of Water Quality

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TO: Dr. Gerald W. Bowes
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Steven G. Saiz

FROM: Steven G. Saiz
Ocean Standards Unit
Division of Water Quality

DATE: OCT 28 2004

SUBJECT: REQUEST FOR AN EXTERNAL PEER REVIEW OF A PROPOSED
CALIFORNIA OCEAN PLAN (OCEAN PLAN) AMENDMENT

The Ocean Standards Unit, Division of Water Quality, State Water Resources Control Board (SWRCB), request by transmittal of this memorandum that you initiate an external scientific peer review (pursuant to Health and Safety Code section 57004) of a proposed Ocean Plan amendment.

Members of the SWRCB will consider the proposed Ocean Plan amendment during the April 2005 regular SWRCB Board Meeting. The proposed Ocean Plan amendment and staff report are now available for peer review. We request that peer reviewers provide comments within 30 days of receipt of the amendment and staff report.

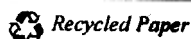
We suggest that reviewers who are assigned to evaluate the proposed Ocean Plan amendment and staff report have expertise in the following areas: application of statistical methods to environmental monitoring data, assessing compliance with water quality standards, and reasonable potential assessments as required under the National Pollutant Discharge Elimination System (NPDES).

A summary of the proposed amendment is included in Attachment 1. Scientific issues to be addressed by peer reviewers are listed in Attachment 2. Individuals involved in development of the proposed amendment are identified in Attachment 3.

The staff contact for this amendment is Steven G. Saiz, who can be reached at (916) 341-5582 or via e-mail at saizs@swrcb.ca.gov. Please feel free to call me if you have any questions about this request. Thank you for your assistance.

Attachments

California Environmental Protection Agency



Summary of Proposed Ocean Plan Amendment to Adopt a Procedure to Determine when a Discharge Causes, has a Reasonable Potential to Cause, or Contributes to an Excursion above an Ocean Plan Water Quality Objective

The 2001 California Ocean Plan contains narrative and numeric water quality objectives for the protection of the beneficial uses of the ocean. Numeric water quality objectives in Table B of the Ocean Plan are translated into numeric effluent limitations by Regional Water Quality Control Board (RWQCB) permit writers. Authority for this permitting process is through the federal National Pollutant Discharge Elimination System (NPDES). The current Ocean Plan, however, does not include specific implementation guidance for determining when a water quality-based effluent limitation is needed.

The proposed amendment would add “reasonable potential” language to the Ocean Plan’s Program of Implementation. In addition, a new Appendix VI will be added to the Ocean Plan to provide further guidance for permit writers. The proposed reasonable potential language is as follows:

If the RWQCB determines, using the procedures in [the Ocean Plan]Appendix VI, that a pollutant is discharged into Ocean Waters at levels which will cause, have the reasonable potential to cause, or contribute to an excursion above any Table B water quality objective, the RWQCB shall incorporate a water quality-based effluent limitation in the Waste Discharge Requirement for the discharge of that pollutant.

This newly proposed Appendix VI contains a procedure developed by Ocean Unit staff to be followed to determine if an effluent discharge has the reasonable potential to exceed a Table B water quality objective, after accounting for dilution and background seawater concentrations.

When facility-specific effluent monitoring data are available, the procedure requires the calculation of a statistical tolerance interval. Specifically, the procedure requires an effluent limitation whenever the one-sided, upper 95% confidence bound on the 95th percentile of the pollutant discharge distribution, or the maximum observed pollutant concentration, exceeds the Table B water quality objective. Alternately, a nonparametric statistical approach is followed when the data are highly censored by observations below the analytical detection limit or a quantitation limit.

Using the new Appendix VI procedure will ensure consistency when characterizing pollutant discharges. The procedure is a scientifically defensible statistical method that accounts for the long-term variability of the pollutant, accounts for limitations associated with sparse data sets, and accounts for uncertainty associated with censored data sets (i.e., non-detected values).

Description of Scientific Issues to be addressed by Peer Reviewers

Proposed Ocean Plan Amendment to Adopt a Procedure to Determine when a Discharge Causes, has a Reasonable Potential to Cause, or Contributes to an Excursion above an Ocean Plan Water Quality Objective

The statute mandate for external scientific peer review (Health and Safety Code Section 57004) states that the reviewer's responsibility is to determine whether the scientific portion of the proposed rule is based upon sound scientific knowledge, methods, and practices.

We request that you make this determination for each of the following issues that constitute the scientific portion of the proposed regulatory action. An explanatory statement is provided for each issue to focus the review.

1. The use of normal tolerance factors and the lognormal distribution assumption when calculating an upper one-sided confidence bound on the 95th percentile with the parametric approach.

This is the primary recommendation for a "reasonable potential" assessment when facility specific monitoring data are available. This recommendation deviates from a nationally used USEPA procedure that uses the maximum observation multiplied by a factor.

2. The use of the Helsel and Cohn (1988) robust regression on order statistics when accounting for censored data with up to 80% censoring.

This approach avoids ambiguity associated with simple substitution schemes and produces reliable summary statistics for censored data sets.

3. The balanced error nonparametric binomial approach for comparing a heavily censored data set to a regulatory standard.

This approach simply uses a count of the number of samples that exceed the regulatory standard. A minimum sample size of 16 is required. This approach allows the comparison of heavily censored data sets with a regulatory standard without computing summary statistics.

4. "Overarching questions"

Reviewers are not limited to addressing only the specific issues presented above, and are asked to contemplate the following "big picture" questions.

- (a) In reading the staff technical report and proposed implementation language, are there any additional scientific issues that are part of the scientific basis of the proposed rule not described above? If so, please comment with respect to the statute language given above.

- (b) Taken as a whole, is the scientific portion of the proposed rule based upon sound scientific knowledge, methods, and practices?

Reviewers should also note that some proposed actions may rely significantly on professional judgment where available scientific data are not as extensive as desired to support the statute requirement for absolute scientific rigor. In these situations, the proposed course of action is favored over no action.

The preceding guidance will ensure that reviewers have an opportunity to comment on all aspects of the scientific basis of the proposed Board action. At the same time, reviewers also should recognize that the Board has a legal obligation to consider and respond to all feedback on the scientific portions of the proposed rule. Because of this obligation, reviewers are encouraged to focus feedback on the scientific issues that are relevant to the central regulatory elements being proposed.

Scientists involved in the development of the Proposed Ocean Plan Amendment to Adopt a Procedure to Determine when a Discharge Causes, has a Reasonable Potential to Cause or Contributes to an Excursion above an Ocean Plan Water Quality Objective

- Dr. Dennis Helsel (USGS, Denver, Colorado) assisted in the recommendations given for the analysis of censored data.
- Robyn Stubor (USEPA, Region IX, San Francisco, CA) assisted in the guidance for assessments when no facility-specific monitoring data are available.
- Robert Smith (independent environmental consultant, Ojai, CA) evaluated an early draft and suggested an evaluation of the effect of lognormal tolerance intervals to non-lognormal distributions.
- Steven G. Saiz (SWRCB, Sacramento, CA) developed the Appendix VI reasonable potential procedure.